

Appl. No. 10/804,758  
Amendment dated October 31, 2007  
Reply to Office action of August 27, 2007

### REMARKS

Responsive to the outstanding Office action, the above application is hereby amended to more particularly point out and distinctly claim what applicants regard as their invention. More specifically, claims 1-13 have been canceled and replaced by new claims 14-21.

None of the prior art references, taken singly or in combination, discloses a GNSS attitude subsystem with a function for calibrating bias and scale factors in a yaw gyroscope using reference attitude angles derived by the GNSS attitude subsystem, as called for by independent claims 14 and 21. Parkinson et al. U.S. 6,052,647 disclose only GNSS (GPS) guidance and does not disclose a gyroscope (INS).

Pinto et al. U.S. 2002/0165669 discloses a two-antenna GPS for attitude measurement, with gyroscope measurements utilized for increasing accuracy. The purpose of the combined systems is to continue to provide attitude solutions when GPS signals are interrupted. A passenger vehicle application is shown as an example. The system is disclosed for attitude measurement, not for navigation or automatic steering. There is no disclosure of a GNSS attitude subsystem calibrating bias and scale factor errors in a yaw gyroscope using reference attitude angles, and a steering control subsystem using the yaw angle rate of change output's for computing and outputting steering control commands to a vehicle steering system.

Even if the Parkinson and Pinto references were combined, they would not provide the features of the claimed invention, particularly the GNSS attitude subsystem calibrating the gyroscope, which in turn provides the steering control commands. In fact, Parkinson teaches away from supplementing GNSS guidance with INS. Pinto likewise teaches away from calibrating the gyroscope with the GNSS attitude subsystem. Pinto contemplates INS usage when GPS signals are unavailable and for improving accuracy using the smoothing effects of gyroscope measurements (Pinto [0127]).

The examiner is invited to contact the undersigned by telephone if prosecution of this application can be expedited thereby.


The Commissioner is authorized to charge any excess fees or credit overpayments to Deposit Account No. 50-3424.

I hereby certify that this paper is being filed by facsimile transmission (571-273-8300) with the U.S. Patent and Trademark Office.

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Respectfully Submitted,

  
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